

Claims

- 1 1. Electric-motor driven parking brake in particular for a vehicle, comprising:
  - 2 - an electric brake-actuating motor, in particular a commutator motor,
  - 3 - a brake-actuating output shaft which extends along a second axis and is driven
  - 4 by the electric brake-actuating motor,
  - 5 - a brake-actuating linkage which is arranged so that it can move parallel to a first
  - 6 axis which is essentially perpendicular to the second axis,
  - 7 - a drive linkage from the brake-actuating output shaft to the brake-actuating
  - 8 linkage in the form of a cam disk or gate guide which is cam-like in the sense
  - 9 that it converts a rotation of the brake-actuating output shaft into a translational
  - 10 movement of the brake-actuating linkage by means of an actuation element
  - 11 which is guided along a surface of the cam disk or gate guide,
  - 12 - wherein the surface of the cam disk or gate guide forms a height profile in a
  - 13 radial direction, and
  - 14 - the orientation of the motor axis of the electric brake-actuating motor is
  - 15 essentially perpendicular to the second axis.
- 1 2. Parking brake in accordance with Claim 1, further comprising:
  - 2 - a worm drive in the drive train between the electric brake-actuating motor and
  - 3 the brake-actuating output shaft.
- 1 3. Parking brake in accordance with Claim 1, wherein
  - 2 - the cam disk or gate guide being shaped with the intention that an essentially
  - 3 constant load is exerted on the electric brake-actuating motor over essentially the
  - 4 entire brake-actuation cycle.
- 1 4. Parking brake in accordance with Claim 1, further comprising
  - 2 - at least one rest position in the surface of the cam disk or gate guide with the
  - 3 intention of effecting a fixed positioning, which is self-locking with respect to
  - 4 restorative forces, of the actuation element.

- 1    5.    Parking brake in accordance with Claim 4, wherein  
2    -    the rest position is located at the position on the surface of the cam disk or gate  
3    guide at which the actuation element is located when the parking brake is pulled  
4    on with essentially nominal force.
  
- 1    6.    Parking brake in accordance with Claim 4, wherein  
2    -    at least one further rest position is arranged in the surface of the cam disk or gate  
3    guide.
  
- 1    7.    Parking brake in accordance with Claim 1, wherein  
2    -    a gearbox, which links the brake-actuating output shaft to the motor shaft, is of  
3    self-locking construction.
  
- 1    8.    Parking brake in accordance with Claim 1, further comprising  
2    -    an additional leverage conversion between the actuation element and the brake-  
3    actuating linkage.
  
- 1    9.    Parking brake in accordance with Claim 4, wherein  
2    -    the rest position takes the form of a depression in the surface of the cam disk or  
3    gate guide.
  
- 1    10.   Parking brake in accordance with Claim 1, wherein  
2    -    the motor axis runs parallel to the first axis.

- 1 11. Electric-motor driven parking brake in particular for a vehicle, comprising:  
2 - an electric brake-actuating motor having a first drive axis,  
3 - a brake-actuating output shaft which extends along a second axis which is  
4 substantially perpendicular to the first axis and is driven by the electric brake-  
5 actuating motor,  
6 - a brake-actuating linkage which is arranged so that it can move along a line  
7 parallel to the first axis,  
8 - a drive linkage from the brake-actuating output shaft to the brake-actuating  
9 linkage which translates a rotational movement around the second axis into a  
10 longitudinal movement parallel to the first drive axis.
- 1 12. Parking brake in accordance with Claim 11, further comprising a cam disk or  
2 gate guide which is cam-like in to convert a rotation of the brake-actuating  
3 output shaft into a translational movement of the brake-actuating linkage by  
4 means of an actuation element which is guided along a surface of the cam disk  
5 or gate guide,  
6 - wherein the surface of the cam disk or gate guide forms a height profile in a  
7 radial direction, and  
8 - the orientation of the motor axis of the electric brake-actuating motor is  
9 essentially perpendicular to the second axis.
- 1 13. Parking brake in accordance with Claim 11, further comprising:  
2 - a worm drive in the drive train between the electric brake-actuating motor and  
3 the brake-actuating output shaft.
- 1 14. Parking brake in accordance with Claim 12, wherein  
2 - the cam disk or gate guide being shaped in such a way that an essentially  
3 constant load is exerted on the electric brake-actuating motor over essentially the  
4 entire brake-actuation cycle.

- 1 15. Parking brake in accordance with Claim 12, further comprising  
2 - at least one rest position in the surface of the cam disk or gate guide for effecting  
3 a fixed positioning, which is self-locking with respect to restorative forces, of  
4 the actuation element.
- 1 16. Parking brake in accordance with Claim 15, wherein  
2 - the rest position is located at the position on the surface of the cam disk or gate  
3 guide at which the actuation element is located when the parking brake is pulled  
4 on with essentially nominal force.
- 1 17. Parking brake in accordance with Claim 15, wherein  
2 - at least one further rest position is arranged in the surface of the cam disk or gate  
3 guide.
- 1 18. Parking brake in accordance with Claim 11, wherein  
2 - a gearbox, which links the brake-actuating output shaft to the motor shaft, is of  
3 self-locking construction.
- 1 19. Parking brake in accordance with Claim 11, further comprising  
2 - an additional leverage conversion between the actuation element and the brake-  
3 actuating linkage.
- 1 20. Parking brake in accordance with Claim 15, wherein  
2 - the rest position takes the form of a depression in the surface of the cam disk or  
3 gate guide.